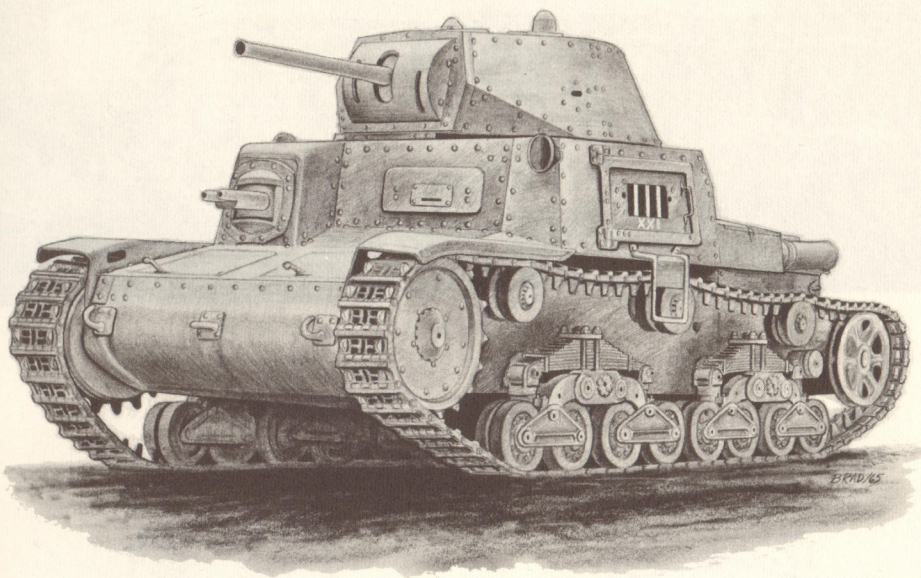




SERIES TEN

Carro Armato Tippo M13/40

(IT)

Sd Kfz 139 'MARDER' III

(GE)

15 cm. G.W. 'LORRAINE'

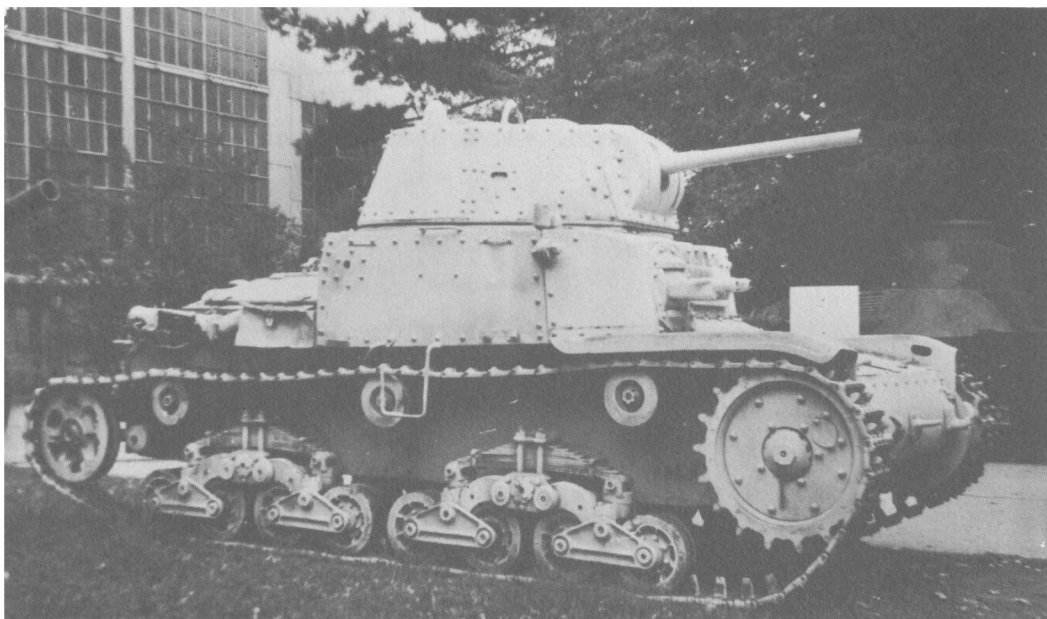
(GE)

A7V Sturmpanzerwagen

(GE)

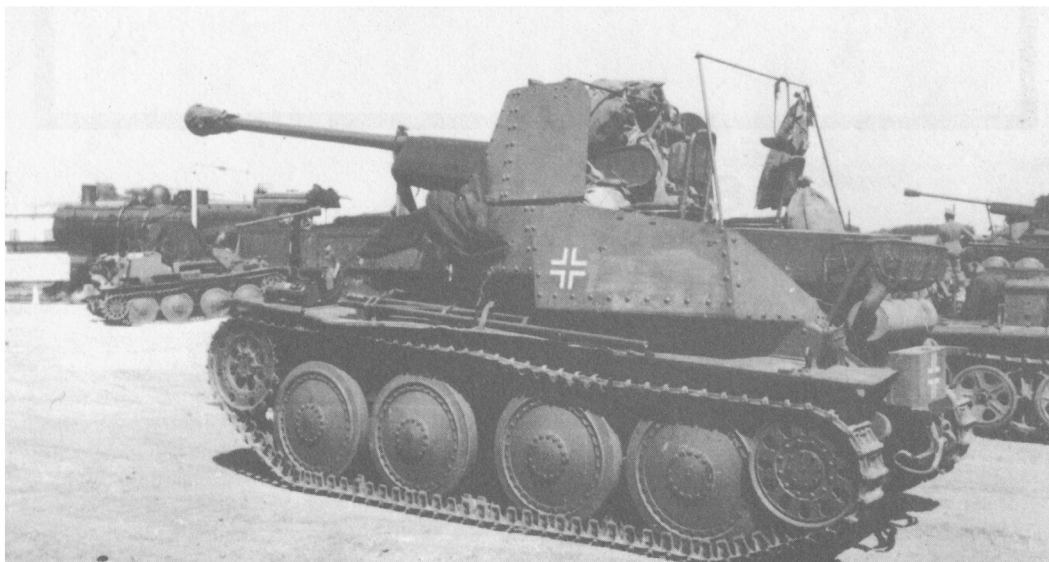


MILITARY VEHICLE PRINTS

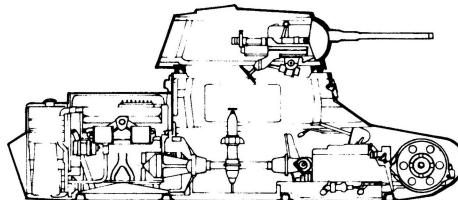
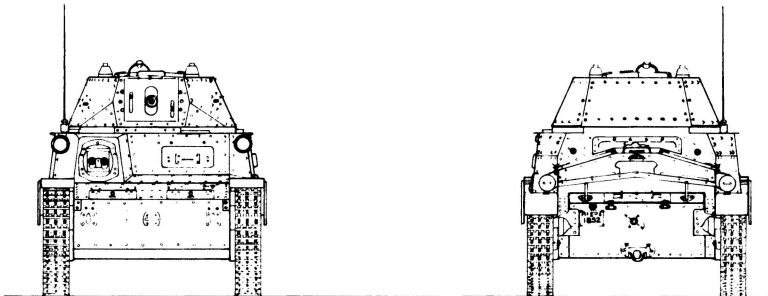
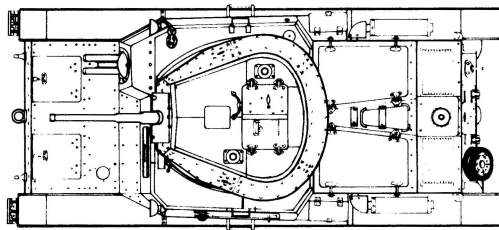
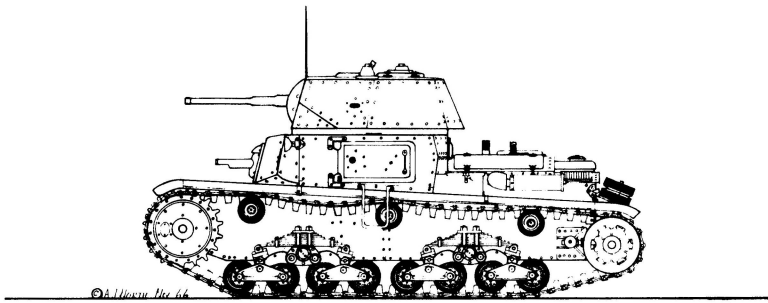


The M 13/40 at the Aberdeen Proving Ground. This is one of the mid production vehicles and has the short length Mudguards.

Italian tanks were painted dark green until the D.A.K. arrived in North Africa. After that they were camouflaged with sand and earth colours to blend more with German Armour.



An Sd Kfz 139 - Panzerjäger 38(t) "Marder 111" in transit from factory to service units. Filled with all necessary gear this vehicle is about to be loaded on-a train.



Carro Armato Tipo M 13/40 - 1940/41
 Scale 1:76 (4mm. to 1 foot). Drawn by A. J. D. North.

Carro Armato Tipo M13/40 - 1940/41.

The Italian forces entered the war with the M11/39 as their main battle tank. This was an eleven ton vehicle with its main armament a 47mm gun mounted in the hull. Its turret was only equipped with two gimbal mounted 8mm Breda machine guns. Due to this layout it left much to be desired and a replacement was soon sought. This appeared as the M13/40 in July, 1940. Based upon the M11/39 it carried its main armament, the 47mm anti-tank gun and MG coaxial in a fully revolving turret. The twin Breda MG's were now mounted in the right hand side of the hull. The armour thickness was increased by an average of 10mm, but the driver's and the rounded nose plates remained at the maximum of 30mm. This heavier weight of armour and additional turret equipment resulted in a fall in speed as compared with the M11/39. Sometimes a fourth 8mm Breda Model 300 was carried and could be mounted in the socket bracket on turret roof and used for anti-aircraft defence.

Early in 1940 an order was placed with the firm of Ansaldo-Fossati of Genoa for the production of 1902 M13/40 tanks. The diesel engines and transmission/steering gear were to be supplied from Fiat-Spa of Turin. By mid July the first 15 vehicles were ready. By the end of the year 250 had been produced. These early production models incorporated many of the parts of the M11/39, notably the rear idler sprockets, side door, side steps and machine gun mountings. Production of this type ended in June 1942, but by this time only 800 were completed as the M13/40, the remainder were used as the basis for the many vehicles based on this series of chassis. Most M13/40's had the short mudguards as shown in the photograph, later models as in drawing, and on display at the R.A.C. Tank Museum, had full length ones.

Variations on the M13/40 chassis were:- the turretless command vehicle M40. This vehicle was mounted a 20mm automatic M35 Breda where the twin hull MG's of the tank were normally fitted. The turret aperture was covered by hatches which divided it laterally into three sections. The forward and rear half moon section opened forward, the central section halved and hinged sideways. An 8mm Breda M38 was carried in a Rotatable pintle supported in a bracket at the forward left edge of the opened turret. In 1941 the first Semovente 75/18 assault guns appeared and in early 1942 the first S.P. carriage appeared mounting the 90/53 A.A. gun. Finally the S.P. carriage mounted a 149mm Howitzer.

In early 1941 the first M14/41 appeared. This was an improved M13/40 with a larger 125 bhp. engine. The only difference between the vehicle drawn and the M14/41 is the small lowered ventilators in the centres of the engine compartment hatches. Based on this vehicle were the later Semovente 75/18, Semovente 75/34, and the M41 command vehicle. Finally there appeared the M15/42 tank with heavier armour and a 47mm gun of 40 calibres length and with it came the M43 command vehicle.

The M13/40 was first in action in October, 1940 with the 1st Raggruppamento (Combat Group) of the Brigata Carriazzata Speciale". At least 15 battalions of the Italian Carristi Corpe (Tank Corp) were equipped with these and subsequent tanks of the series. They saw further service in North Africa, Greece and Yugoslavia. After the Armistice in September, 1943 some served with the Repubblica Sociale Italiana Army's armoured groups Leonessa and Leoncella. The German army took into service all of the available war supplies and made good use of the Italian armour.

Next to the Italians however, the Commonwealth forces had most experience with the M13/40. From 73 Italian light and medium tanks captured at Sidi Barani (12th Dec.1940) the 6th Australian Cavalry managed to put 16 medium tanks in working order. They equipped three squadrons; one of six tanks (1, M13/40 and 5 M11/39) and two with two tanks, supported by the Bren carriers. The Squadrons were named Ringo, Rabbit and Wombat respectively and the vehicles had a large white Kangaroo painted on the sides, driver's plate and turret sides and back to facilitate recognition during the attack on Tobruk.

At Breda Fomm (6th/7th Feb.41) General Wavell's offensive captured 112 mediums, nearly all M13/40, many in good running order. The best were fitted with wireless sets and were used to equip the 6th Royal Tank Regiment. They were found to be uncomfortable and unwilling to handle, but the gun was an accurate hard-hitting weapon. Mechanical design and construction was sound though somewhat dated. The main failure was poor splash protection and armour which, too light, in any case, tended to crack when hit. They did good work in defence against the first offensive of the D.A.K. but many had to be destroyed for lack of diesel fuel at Musus (5th April, 41). The remainder were abandoned one by one as fuel supply ran out.

Italian tanks were painted dark green until the D.A.K. arrived in North Africa. After that they were camouflaged with sand and earth colours to blend more with the German Armour.

Designation of tanks was by weight/year i.e. M13/40 was 13 ton tank developed in 1940. Guns were designated by calibre in mm/calibres length of barrel i.e. 47/32 was a 47mm gun of 32 calibres length.

Technical Specification for Carro Armato Tipo M 13/40.

Crew: 4
Weight, Combat loaded: 30240 lbs. 13.5 Long tons, 15.12 Short tons,
13.72 Tonnes.

Performance

Speed, Max. Road: 19 m.p.h. (30.5 Km.p.h.)
Cross country: 8 m.p.h. (13 Km.p.h.)
Max. Gradient: 40 degrees
Fording depth: 3' 3½" (100 cm)
Trench crossing: 6' 10½" (210 cm)
Step: 2' 11½" (90 cm)
Min. Turning circle: 20' 0" (6.10 metres)
Ground pressure: 13.4 lbs/sq.ins (0.94 Kg/sq.cm)
Range (internal fuel), Road: 124 Miles (200 Km)

Dimensions

Length overall: 16' 1½" (491.5 cm)
Width: 7' 3½" (223 cm)
Height: 7' 10" (239 cm)
Ground clearance: 1' 3" (38 cm)

Trackwork

Centres: 6' 2½" (189 cm)
Length on ground: 9' 6" (288 cm)
Width: 10½" (26 cm)

Number of links per track: 84

Mechanical Details

Engine: 1 x SPA 8T Fiat-Ansaldo 8-cylinder 90 degree Vee watercooled diesel of 11.14 litres developing 105 bhp at 1800 rpm.

Transmission: Fiat Ansaldo 8 FZ R with 4 forward and 1 reverse speed.

Suspension: Semi-elliptic leaf spring acting on four wheel bogies.

Armament

Main: 1 x 47 mm Model 37
Calibre, and length in calibres: 47 mm (1.80 ins) L/32.
Traverse: Turret 360 degrees. Operation: hand - Power take off.
Elevation: plus 20 degrees, minus 10 degrees.
Muzzle velocity: 2060 ft/sec with 3.25 lb (1.48 Kg) AP or HE shot.
Penetration of 30 degree slope Homogenous Armour
1.884 (48 mm) at 400 yds.
1.488 (38 mm) at 750 yds.
1.250 (32 mm) at 1000 yds.

Secondary armament: 1 x 8 mm Coaxial Breda MG
2 x 8 mm Breda MG in hull.

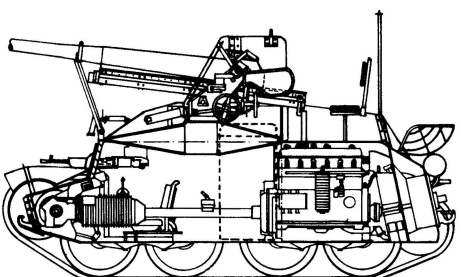
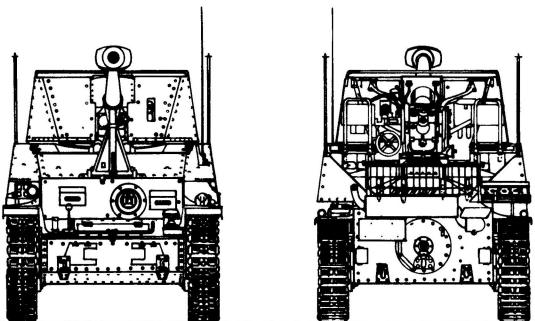
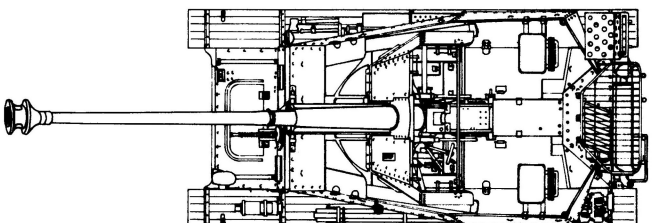
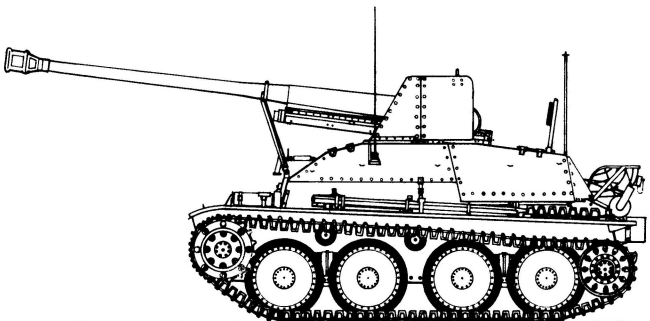
Stowage

Ammunition, main armament: 87 rds.
Ammunition, secondary armament: 3048 rds.

Internal Fuel capacity: 33 + 9 Imp. gals. 39.6 + 10.6 U.S. gals.
150 + 40 Litres.

ArmourType:

Hull, Nose: 1.176" (30 mm) rounded
Glasis plate: 0.984" (25 mm) at 81 degrees.
Drivers plate: 1.176" (30 mm) at 11 degrees.
Sides, 0.984" (25 mm) at 9 + 0 degrees.
Rear, 0.984" (25 mm) at 9 degrees.
Decking: 0.540" (14 mm)
Belly, 0.228" (6 mm) at 90 degrees.
Turret
Front: 1.572" (40 mm) at 16 degrees.
Sides: 0.982" (25 mm) at 22 degrees.
Rear: 0.982" (25 mm) at 22 degrees.
Roof: 0.540" (14 mm) at 85 degrees.



Panzer Jaeger 38 fuer 7,62cm PAK36 (T) — 1942
 Scale 1:76 (4mm: to 1 foot) Drawn by H. L. Doyle.

Panzerjaeger 38(t) fuer 7.62 cm PAK 36(r) Sd Kfz 139 "Marder III" - 1941/42

In 1938 a new tank the TNH-P-5 appeared from the works of Ceskomoravska Kolben Danek Praga in Prague, Czechoslovakia. Following the German annexation in March 1939, these vehicles were taken over by the Wehrmacht, who found they compared favourably in performance, armour and armament with the heavier Pz Kw III. Thus they served as the Pz Kw 38(t), along side the older Pz Kw 35(t) - Czech LTM 35 - as the main equipment of three of the ten Panzer Divisions that were used to invade France. ('t' stands for Tschechoslowakisch, German for Czech).

Possible development for a heavier armament than the 3.7cm was prevented by the small size of the turret, thus when they took part in the invasion of Russia, they were obsolescent. The appearance of the T 34 and KV 1 rendered them virtually useless. This coupled with the heavy losses of all types of tanks and the mechanical strain of the long campaign put the supply of replacements in a critical position. By December 1941 it was realised that the only way to even maintain the fighting strength of the Panzer Divisions was to supply them with makeshift self-propelled guns.

Equally outclassed by the new Russian equipment, were the German anti-tank guns, which included the recently introduced 5 cm PAK 38. The new 7.5cm PAK 40 was still being developed and was not yet ready for battle. Fortunately, amongst the vast stocks of Russian equipment captured as a result of their earlier successes, there were many of the high velocity 76 mm field guns which were more than capable of destroying the new tanks. These were pressed into service under the designation - FK 296. The ordnance Department later had them improved, by fitting a muzzle brake and rechambering to take the PAK 40 cartridge. These were named the PAK 36 and some were mounted on the Pz Kpw 38(t) chassis by the parent firm at Prague, now renamed Boehmisch-Maehrische Maschinenfabrik A. G. These first appeared in March 1942 and production continued until later that year when a total of 344 had been manufactured.

The production for the first few months of these "Panzerjaeger 38(t) fuer 7.62cm PAK 36(r) - "Marder III", was sent to Africa to assist in the drive on Egypt. British sources claim that 117 vehicles had arrived by the end of May. So good was the performance of the 7.62cm, that the British apparently at first thought a self-propelled 8.8cm FLAK 18 or 36 had been introduced. "Marder III's" played an important part in most of the actions in Africa but was particularly prominent in the battle of El Alemein. However, the majority of those produced, served on the East front as did all the Pz Kw II versions - "Marder II". These will be the subject of a future drawing in this series.

To speed production, the conversion was made as simple as possible. The turret and forward deck plates were removed and replaced by a cruciform on which the gun, less its undercarriage, was mounted. A low armoured superstructure was fitted around this to protect the mounting. The sloped engine covers were replaced by flat hinged plates. For access to the engine these could be lifted when the seats had been folded over the sides, their backrests having been unclipped and placed in holders on the Wire basket. The uprights at the rear supported a large 'Tent' for the crew, which when not in use was carried on the left track guard over the cleaning rods. The positions of the driver and radio operator/machine gunner remained unchanged and they entered through flaps at the front of the gun shield. Ammunition was stored vertically, on either side of the cruciform, in the "Turret Well". In addition three rounds were carried in each of two boxes on either side of the shield.

Technical Specification for Panzerjaeger 38 (t) fuer 7.62 cm PAK 36 (r)

Crew: 4
Weight, Combat loaded: 23520 lbs. 10.5 Long tons, 11.76 Short tons,
10.67 Tonnes.

Performance

Speed, Max, Road: 26 m.p.h. (42 Km.p.h.)
Cross country: 9 m.p.h. (15 Km.p.h.)
Max. Gradient: 30 degrees.
Fording depth: 2' 11 1/2" (90 cm)
Trench crossing: 6' 3" (190 cm)
Step: 2' 9 1/2" (85 cm)
Range (internal fuel) Road: 115 Miles (185 Km)
Cross country: 87 Miles (140 Km)

Dimensions

Length overall: 21' 1 1/2" (643 cm)
Length: 15' 3" (464 cm)
Width overall: 7' 1" (216 cm)
Height: 8' 2 1/2" (250 cm)
Ground clearance: 1' 3 1/2" (40 cm)
Trackwork
Centres: 5' 10" (178 cm)
Length on ground: 8' 10 1/2" (292 cm)
Width: 11 1/2" (29.3 cm)
Number of links per track: 93

Mechanical Details

Engine: 1 x Praga EPA 6-cyl. OHV inline watercooled petrol of 7.75 litres developing 125 bhp at 2200 rpm.
Transmission: Praga-Wilson, Mechanical preselective 5 forward and 1 reverse.
Steering: Epicyclic clutch and brake.
Suspension: Semi-elliptic leaf springs operating on twin wheel bogies.

Armament

Main: 1 x 7.62 cm PAK 36 (r) (Rechambered Russian FK 296 or 297)
Calibre, and length in calibres: 76.2 mm (2.988 ins), L/54.8
Traverse: 25 degrees left, 25 degrees right. Operation: hand.
Elevation: plus 16 degrees minus 6 degrees.

Secondary armament: 1 x 7.92 mm MG 37 (t)

Stowage

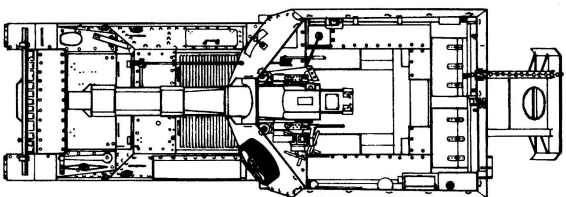
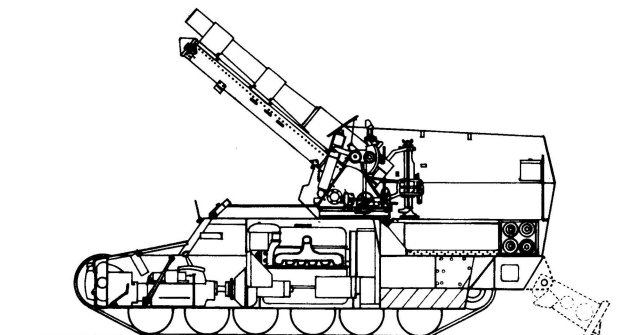
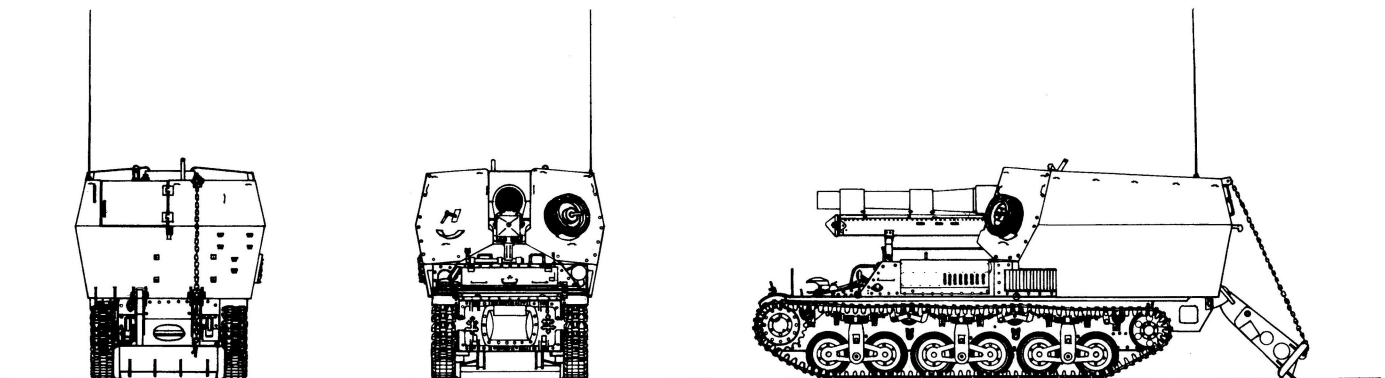
Ammunition, main armament: 30 rds.
Ammunition, secondary armament: 1500 rds.
Internal Fuel capacity: 48 Imp. gals. 57.6 U.S. gals. 218 Litres.

Armour

Type:
Hull, Nose upper: 2.040" (52 mm) at 16 degrees.
Nose lower: 0.588" (15 mm) at 74 degrees.
Glasis plate: 0.468" (12 mm) at 74 degrees.
Drivers plate: 2.040" (52 mm) at 17 degrees.
Sides: 0.588" (15 mm) at 0 degrees.
Rear: 0.588" (15 mm) at 16 degrees.
Decking: 0.384" (10 mm)
Belly: 0.312" (8 mm) at 90 degrees.

Superstructure

Front, lower: 0.624" (16 mm) at 55 degrees.
Front, upper: 0.348" (9 mm) at 88 degrees.
Sides: 0.624" (16 mm) at 11 degrees.
Gun shield front: 0.432" (11 mm) at 31 degrees.
Gun shield sides: 0.432" (11 mm) at 12 degrees.



15 cm s.F. H. auf "Lorraine Schlepper" (f) - 1942
 Scale 1:76 (4mm: to 1 foot) Drawn by H. L. Doyle.

15cm. s.F.H. auf Gw. 'Lorraine Schlepper' (f) - Sd Kfz 135/1 - 1942

Following the collapse of France in 1940 large numbers of military vehicles and equipment fell into German hands. These were stockpiled as they were considered inferior to existing German equipment. However, the expansion of the Wehrmacht for the invasion of Russia; the subsequent maintenance, posed too great a task for German industry. The obsolete Pz Kpfw II and Pz Kpfw 38(t) chassis had to be used as anti-tank gun mounts to counteract the heavy losses of tanks. This forced the shelving of plans to utilise these in the Artillery role (see Bellona Series 5, No.20 (GE Wespe) As an alternative, which in no way affected the supply of new equipment, one of the French vehicles was chosen to be matched with a 15 cm Howitzer of World War I vintage.

The chassis selected was the 'Tracteur Blinde 38L', which had entered production in 1937 as a lightly armoured ammunition and personnel carrier. With it's driving compartment forward, engine amidships and open tray at the rear, it represented an ideal subject for a quick and simple conversion needing little specialised machinery. The contract for the conversion was awarded to the firm of Alfred Becker of Krefeld in early 1942.

The 15cm. schwere FeldHaubitze 13/1 had been manufactured by Krupp during World War I. It entered service early in 1917 and at that period was amongst the finest Howitzers in existence. It was capable of firing a 90 lb (40.8 kg) shell to a maximum of 9,500 yds (8,600 metres). Its rate of fire at 4 rounds per minute was somewhat slow by 1942 standards.

It is thought that some Gesuetzwagen Lorraine served on the East front from mid 1942. They were first committed against the Allies at the battle of El Alamein after which four were captured. Two of these were extensively tested by the British and Americans. One of these is on display at A.P.G. Aberdeen, Maryland, U.S.A. Many others served with D.A.K. until the fall of Tunisia in May 1943. This early version is illustrated by the photograph.

Following battle experience several improvements were carried out. One of these improved vehicles (captured in Normandy, July 1944) is the subject of the drawing. The spade was extended and its mounting modified to enable it to be raised or lowered from within the fighting compartment. The Howitzer travel rest was similarly modified to facilitate operation by levers from within, whereas with the earlier version a crewman had to get out and operate them by hand. The spare wheels, originally on top of the engine cover, inside the fighting compartment, were moved to racks on the front plates. The unmodified spade layout is shown dotted on the sectional view.

The suspension of the chassis was heavily overloaded especially at the rear and the overweight affected the mechanical reliability. The engine had, in any case, been originally developed for use in sports cars, and the S.T.T. felt it was more suited to that role. A novel feature of the chassis is the use of the steering and differential casing as the front nose plate. Despite it's short-comings and it's makeshift nature, it provided an adequate solution to the problems of that period.

A total of 102 vehicles were converted. A further series of 24 were completed with the 10.5cm Le.F.H. 18 similar to the 'Wespe', incorporating all the improvements mentioned as standard. The "Tracteur Blinde 38L" was also used for it's original purpose under the designation 'Munition Transport Kw. auf Lorraine Schlepper (f)', and others carried the French 4.7cm Anti-Tank gun on the engine cover but were not fitted with any armoured fighting compartment. A further conversion was ordered in 1943. This was the Sd Kfz 135, 'Marder 1' mounting the 7.5cm PAK 40. This will feature in this series later.

Technical Specification for 15 cm sFH auf GW "Lorraine Schlepper" (f)

Crew: 4
Weight, Combat loaded: 18726 lbs. 8.36 Long tons, 9.36 short tons
8.49 Tonnes.

Performance

Speed, Max. Road: 21 m.p.h. (34 Km.p.h)
Cross country: 8 m.p.h. (13 Km.p.h.)
Max. Gradient: 24 degrees (45%)
Fording depth: 2' 5 1/2" (85 cm)
Trench crossing: 5' 11" (180 cm)
Step: 1' 10" (56 cm)
Ground pressure: 92 lbs/sq.ins (0.65 Kg/sq.cm)
Range (internal fuel), Road: 84 Miles (135 Km)
Cross country: 55 Miles (88 Km)

Dimensions

Length overall: 17' 5" (531 cm)
Length: 15' 6 1/2" (474 cm)
Width overall: 6' 2" (188 cm)
Height: 7' 3 3/4" (223 cm)
Ground clearance: 7" (18 cm)
Road wheel dia (overall) 1' 5" (43.2 cm)

Trackwork

Centres: 4' 5" (134 cm)
Length on ground: 8' 11 1/2" (274 cm)
Width: 9 1/2" (24 cm)
Pitch: 3.25" (8.2 cm)

Number of links per track: 109. Type: dry pin.

Mechanical Details

Engine: 1 x De La Haye 103 TT, in line 6-cyl. watercooled petrol of 3.55 litres developing 80 bhp at 2800 rpm.

Transmission: Mechanical crash type 5 forward 1 reverse.

Steering: Controlled differential.

Suspension: Semi-elliptic leaf springs.

Armament

Main: 1 x 15 cm s.FH.13
Calibre, and length in calibres: 150 mm (5.9 ins), L/17.
Traverse: 7 degrees left, 7 degrees right. Operation: hand.
Elevation: plus 40 degrees, minus 1.25 degrees.
Max. Range: 9500 yards (8675 metres)

Stowage

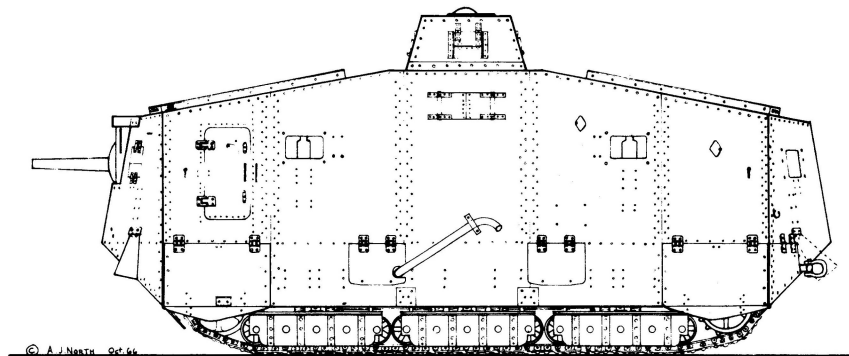
Ammunition, main armament: 8 rds.

Internal Fuel capacity: 24.4 Imp. gals. 29.33 U.S. gals. 111 Litres.

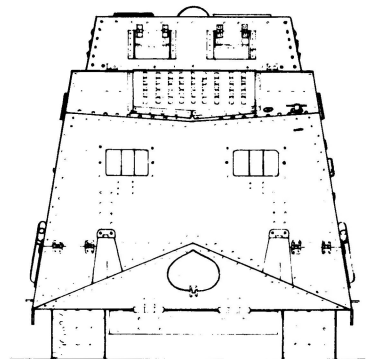
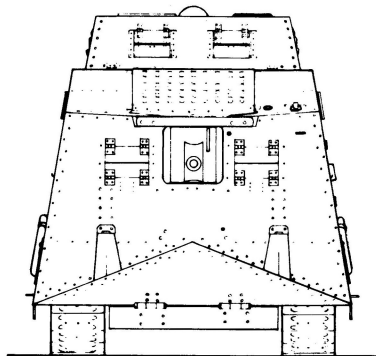
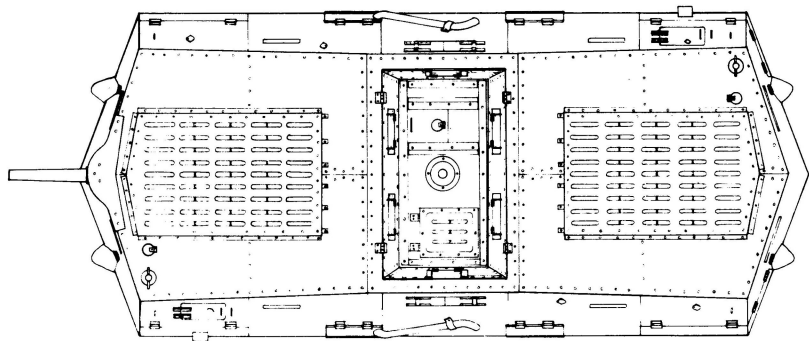
Armour

Type:

Hull, Nose	0.468" (12 mm) casting
Glasis plate:	0.372" (9.5 mm) at 10 degrees.
Drivers plate:	0.372" (9.5mm) at 55 degrees.
Sides,	0.348" (9 mm) at 90 degrees.
Rear,	0.348" (9 mm) at 79 degrees.
Decking:	0.228" (6 mm)
Belly,	0.192" (5 mm) at 0 degrees.
Superstructure	
Front:	0.384" (10 mm) at 72 + 46 degrees.
Sides:	0.384" (10 mm) at 78 + 80 degrees.
Rear, upper:	0.264" (7 mm) at 78 degrees.
Rear, lower:	0.264" (7 mm) at 79 degrees.
Mantel:	0.264" (7 mm)



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ATV Sturmpanzerwagen - 1916/18.
Scale 1/76 (4mm. to 1 foot). Drawn by A. J. D. North.

A7V Sturmpanzerwagen - 1916/1918.

The German High Command first heard rumours of the existence of British armoured vehicles early in 1916. However, they remained indifferent to this new form of weapon until they saw its results in the first British tank action which took place on 15th September of that year.

Accordingly, the High Command appointed a Committee of experts - Allgemeine Kriegsdepartement 7 abteilung Verkehrswesen - to investigate the possibilities of developing a suitable German tank. They obtained an American Holt caterpillar tractor and from this a tracked chassis was developed. Plans were made to build an armoured vehicle and cargo carrier on this chassis.

A wooden mock up of the armoured vehicle was demonstrated to the General Staff on 14th May, 1917. The design of this vehicle with modifications was accepted and designated "A7V" - Sturmpanzerwagen, which was an abbreviation of the Committee title.

The first armoured vehicle was produced in October 1917. However, they did not go into full production until the spring of 1918 when Daimler Motoren Gesellschaft of Marienfelde - Berlin, were given an order for 100 vehicles. The tank body was ordered from Steffens and Noelle also of Berlin. Daimler's estimated they could supply at the rate of 5 per month. In fact only 20 were completed before the Armistice was signed.

The "A7V" was powered by two Daimler 4 cylinder sleeve valve, water cooled 150 H.P. engines which gave this heavy vehicle a speed of about 6 m.p.h. on smooth ground. Maximum armour thickness was the 30mm front plate. The sides and end could resist direct hits from field guns at long range but the top was so thinly armoured that it afforded very little protection. There were numerous joints and crevices in the plating which left the crew in danger of injury by bullet splash. In construction it was like the British tanks, being all rivetted, but the layout of the armour plates was very haphazard. Some models, as in the photograph had each side and both ends cut from single sheets of armour plate. Others like the drawn version had sides built up from as many as five sheets and ends from two sheets. In fact from pictorial evidence it is impossible to find two tanks completely alike. The top of all models remained much the same. For transportation by rail the turret on top, which was the drivers position, folded flat onto the roof. The top and sides were unbolted and the front and rear plates hinged outwards.

The main armament was one 5.7cm captured Belgian Sokol cannon, with approximately 25 degrees traverse left and right. The cost of a complete "A7V" in 1918 was a quarter of a million marks.

Crews were drawn from the appropriate Arms of the German Army, and consisted of eighteen men. Commander, Driver, two Gunners, two loaders, six machine gunners, six mechanics cum machine gun loaders. Every man received the Iron Cross on joining the Service. Pay for junior ranks was six marks a day.

The "A7V" was first used in the Great German Offensive of March 21st 1918 at St. Quintin. Four "A7V's" and five captured "Mk IV's" were employed with good effect. Again on 24th April, 1918, when the Germans attacked on a 4 mile front at Villars Bretonneux. The spearhead of the attack was 13 "A7V's". One "A7V" took part in the first tank v tank battle when it engaged two "Mk IV - Females" and forced them to withdraw. An "Mk IV - Male" commanded by a Lt. Mitchell engaged and knocked out the "A7V". Two more "A7V's" arrived. Lt. Mitchell's tank engaged these also. One ran up a bank and overturned (this tank named "Elfriede" was later salvaged by the 1st Battalion tanks). The other received 3 hits from a 6 pdr. and was knocked out. Later the Germans managed to salvage this under cover of darkness.

After the War an "A7V" was put on show in London. Another was sent to the Australian War Museum and a third to America. All the remaining serviceable "A7V's" were transferred to the Polish Army. The Poles used them in the Russo-Polish War of 1919/20. During the battle of Warsaw five "A7V's" were employed to good effect. They remained in service until 1921.

The "A7V Ueberlandwagen" (Cargo Carrier) was of similar mechanical layout. Drivers remained atop of the engine and load was carried at the front and rear. The "A7V" drawn carried markings as follows: Large Iron Crosses on front and rear plates. Two Iron Crosses on each side, centred above the engine inspection hatches and the Roman Numeral "One" outlined in white between the two.

Technical Specification for A7V Sturmpanzerwagen

Crew: 18
Weight, Combat loaded: 71680 lbs.
32 long tons, 35.84 Short tons, 32.51 Tonnes.

Performance

Speed, Max. Road: 5.6 m.p.h. (9 Km.p.h.)
Max. Gradient: 30 degrees
Trench crossing: 7' 2" (220 cm)
Step: 1' 5 3/4" (45.5 cm)
Ground pressure: 8.5 lbs/sq.ins (0.598 Kg/sq.cm)
Range (internal fuel) 50 Miles (80 Km)

Dimensions

Length overall: 26' 3" (800 cm)
Length: 24' 0" (735 cm)
Width overall: 10' 6" (320 cm)
Height: 11' 6" (350 cm)
Ground clearance: 8" (20 cm)
Fire height of gun: 6' 3 1/2" (190 cm)

Trackwork

Centres: 7' 4" (211.5 cm)
Length on ground: 14' 9" (450 cm)
Width: 1' 8 1/4" (52 cm)
Number of links per track: 48

Mechanical Details

Engine: 2 x Daimler 165204 17 litre watercooled petrol developing a total of 200 bhp at 800/900 rpm.
Transmission: Adler werke - 3 forward 3 reverse
Suspension: two coil springs acting on front and rear five wheel bogies.
four coil springs acting on centre bogie.

Armament

Main: 1 x 5.7 cm Sokol Kanone (b)
Calibre: and length in calibres: 57mm
Traverse: 25 degrees right and left.

Secondary armament: 6 x s.MG Maxim 1908

Stowage

Ammunition, main armament: 500 rds.
Ammunition, secondary armament: 18000 rds.

Internal Fuel Capacity: 132 Imp.gals. 158.5 U.S. gals. 600 Litres.

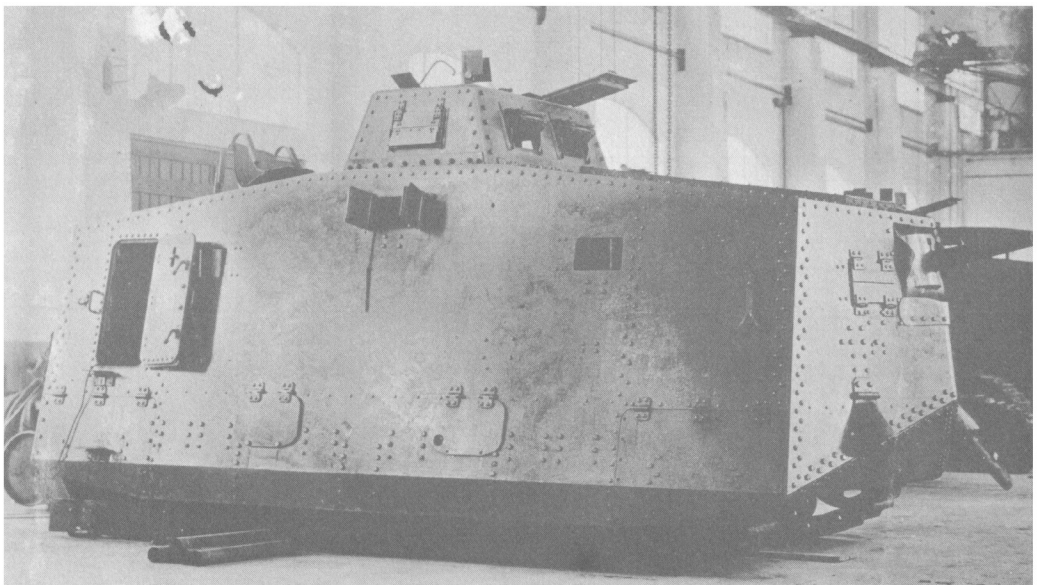
Armour

Type: Rolled Steel.
Hull, Nose plate: 30 mm
Sides, 20 mm
Rear, 20 mm
Decking: 10 mm

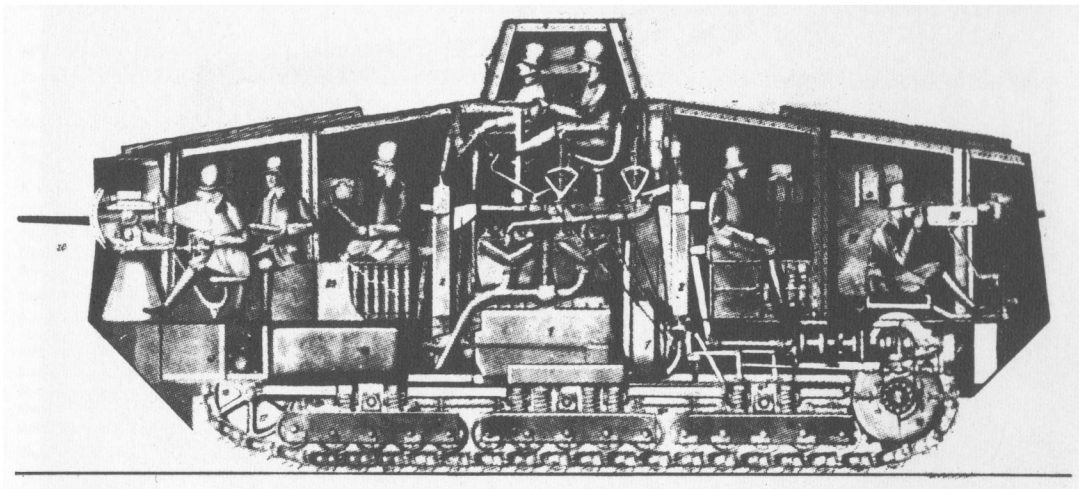


An early version of the Geschuetzwagen Lorraine, abandoned in Libya 1942. The unit markings on the rear plate show it was belong to the 21st Panzer Division. Note rack for water cans and clips for cleaning rods on back. Stripped camouflage pattern and unused shell are also of interest.

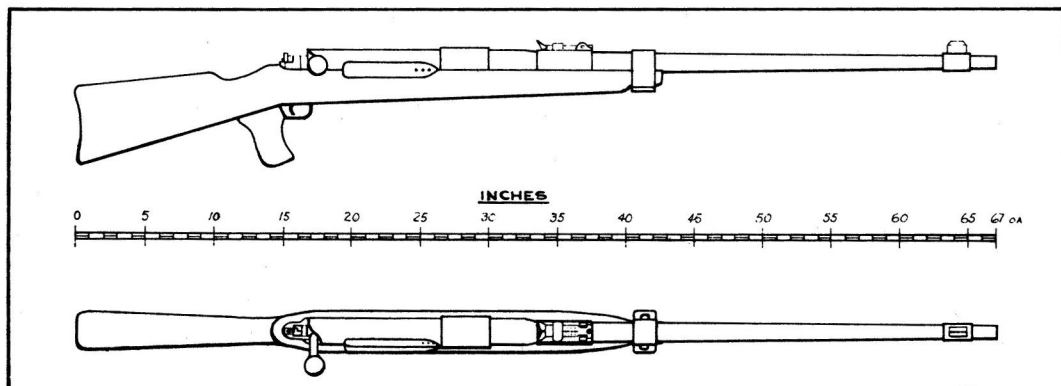
(R.A.C. TANK MUSEUM PHOTO)



An "A7V" nearing completion at the Daimler factory. This vehicle is considerably different, in external detail, to that drawn. The Armour is made from a large single sheet and extends lower than on earlier models. The Gun mounting is also of a more advanced type.



This sectional view of the "A7V" shows the layout of the left hand engine, suspension and transmission. Fuel tanks are underneath the main ammunition stowage compartment. The crew of 18 men was disposed of as follows: Commander, driver on top of engines. Two gunners and two loaders forward with the main armament. A machine gunner at each of the six MG's (2 on each side, 2 at rear) and six others, machine gun loaders/mechanics.



Weapons of World War 1 - No. 1

Germany

13mm - Anti-tank rifle (1918)

Drawn by A. J. D. North.

Due to the increased use of tanks on the western front, the German High Command sought a suitable defensive weapon for use by the Infantry. This resulted in the development in 1917/18 of this heavy 13mm Anti-tank rifle. It was a single shot bolt action and was mounted on a tripod for firing. The heavy bullet was a scaled up 7.92mm and was capable of penetrating the armour of tanks. However, due to its heavy recoil, it was not a success.

The same 13mm ammunition was also used in the dual purpose AT/AA "Tank und Flieger" (T. u. F.) Machine gun. However, the Armistice was completed before this weapon was put into mass production.

Weight of rifle: 36 lbs. Length: 5' 7" (169cm). First used: August 1918.